HER EDUCATION AND USINESS STANDARDS

LLARD EUGENE HOTCHKISS

Barbara Weinstock Lectures on The Morals of Trade

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BY

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BARBARA WEINSTOCK
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HIGHER EDUCATION AND BUSINESS STANDARDS

LAST summer, when we reached California for a year's sojourn, we had the good fortune to secure a house with a splendid garden. A few weeks ago, after the early warm days of a California February had opened up the first blossoms of the season, our little five-year-old discovered that the garden furnished a fine outlet for her enterprise, and she soon produced two gorgeous — I will not say beautiful — bouquets. Barring a certain doubt about her mother's approval, she was well satisfied with her

achievement, she felt a sense of completeness in what she had done — and well she might, for she had not left a visible bud.

There is a strong tendency to go at business the way Helen went at the garden. She knew what to do with bouquets; raw material for making them was within her reach; what more natural than to turn it, in the most obvious and simple way, into the product for which it was designed. From her standpoint such a procedure was entirely correct — she was making bouquets for herself and her friends; every one in her circle would share the benefit of her industry.

Whenever in the past business enter-

prise has proceeded from a similar viewpoint, we have stood aside and let it proceed; it was not our garden; we were quite willing to take the rôle of disinterested spectators. Recently we have discovered that it is our garden; we have learned that we are not disinterested; we now see that business plays a large part in the life of every one of us. That being the case, we assume the right to question its processes, its underlying policies, and its results. We are gradually coming to think of business in terms of an integrated and unified national life. We desire the national life to be both wholesome and secure.

What the public really wants from business, then, is a contribution to na-

tional welfare, and it has become convinced that, by taking thought, it can make the contribution more certain and more uniform than it has been in the past. Many business men share this view; with varying zeal they are trying to work out standards of organization that will insure the kind of regard for general welfare which the public has come to demand.

This is the new idea in business; it has already taken deep root; but it needs to be further developed. We have the difficult task of reducing an idea to a practical working plan. How shall we go about it? Fortunately the idea itself contains a hint for further procedure. A new attitude in business must be

coupled with a new attitude in public policy.

When my enterprising child made an onslaught on the garden it would have been easy enough to punish her; but it is doubtful if mere punishment gets very far in a case of that sort. Unless we can teach the child to enjoy the garden without destroying it, the restraining influence of punishment will be no stronger than the memory of its pain or the fear of its repetition. This memory of the past and fear of the future usually wage a most unequal contest with the vivid and alluring temptation of the present.

But should not the child be restrained? As far as necessary to protect the garden,

and perhaps also to make her conscious of an authority in the world outside of her own will, yes — but that is not the main task. The main task is to educate her, to develop an understanding of the garden, to get her in the frame of mind in which she will derive her greatest enjoyment when she cultivates it and sees it grow, and when she restricts her picking to a reasonable share of what the garden produces.

In the actual case before us, the child was after quick and easy results, the only kind she could comprehend; she was unable to look upon the garden as a living thing whose life and health must be preserved to-day in order that it may yield returns to-morrow and next week. An-

alyzed with adult understanding, her essential fault was a failure to get beyond immediate results and to view the garden from a long-time angle. We ought not to expect her to do this now, but we do expect her to do it when she is grown up. We expect in time so to educate her that she will be able to think of the garden in terms of permanence and growth and to make an effective use of it from that standpoint; and this same education in long-time effectiveness is what we want in business.

Business standards must be discussed from the standpoint of efficiency, but efficiency needs to be interpreted. We may as well admit at the start that the efficiency ideal is not entirely in good

repute at this moment.[1] If I may import an expression from England, we have been somewhat "fed up" with efficiency during the recent past and the ration has been rather too much for our digestion.

Away back in the eighties, before the dominance of business in American society had been questioned, efficiency, as the term was then understood, had a place among the elect; it was the intimate associate of business success. Then came the muck-raker, and with him came also anti-trust cases and insurance investigations. We turned our attention to

[1] At the time this was written, in the spring of 1916, it will be recalled, the German war machine for nearly two years had been demonstrating its efficiency; the Allies had not yet matched it, and we did not like the work that efficiency was doing.

labor outbreaks, to graft prosecutions, and to land steals. We talked about "malefactors of great wealth." We even became interested in Schedule K. And so, during the first decade of the new century a whole train of revelations, incidents, and phrases tempered our regard for business and brought many business practices under the ban of law and hostile sentiment. Efficiency was in bad company and suffered in reputation.

But efficiency was able to prove an alibi; we were told that the thing which posed as efficiency was not efficiency, but special privilege, and we were again persuaded of the great service a regenerate and socialized efficiency could render. Just at this point came the outbreak in

Europe; efficiency was again caught in bad company, and we began to hear such phrases as the "moral breakdown of efficiency," "efficiency, a false ideal," and others of similar import. In an article bearing the title, "Moral Breakdown of Efficiency," published in the "Century" for June, 1915, it was maintained that pursuit of efficiency had led and was still leading civilization on a downward path.

In addition to the reputation of keeping bad company, efficiency has to bear the odium of many foolish and inefficient deeds performed by its self-appointed prophets. The quest for efficiency has called forth in business a new functionary known as the "efficiency expert." Many

of these men have done a vast amount of valuable work, but many others have not. While the real expert has been raising the level of business organization, the others have been piling up a large wastage of poor work and lost confidence.

But these are side issues. The main fact stands out above them. We have been steadily adding to the burdens on industrial and commercial equipment; even more have we increased the stresses and the strains on human life. A devastating war is now suddenly taking up the slack, and the slow and painful task of making the world efficient must be hastened in order that society may bear the load. In these circumstances we need not

apologize for making efficiency the main support of business standards. Nor need we assume, as does the author just cited, that the efficiency ideal in any way conflicts with the ideal of moral responsibility and service.

Of course, if we reflect, the abstract and impersonal thing which engineers define as the ratio between energy expended and result obtained has no moral quality in itself. Whatever of morality or lack of morality the word "efficiency" calls forth is given to it by the manner in which the terms of the ratio are defined. It is for society to make the definitions. Society may determine the forms and the limitations under which it will have business energy expended, and it may

decide what are the social ends toward which it will have business effort contribute. Guided by wise social policy, efficiency and service go hand in hand.

Since business is subject to control by society, it follows that the efficiency factors in a particular business, in a whole industry, or in business generally, must adjust themselves to the decisions that society has made, and they must also take account of decisions that it may make in the future. And these decisions are not all recorded in the law or even in the vague thing we call public opinion. Laws and opinions of particular groups, group morality, individual morality, even inertia, and a long list of more subtle and often capricious reactions are chan-

nels through which social purpose finds expression.

It is worth our while to consider how these reactions may affect practical administration. No reflection is needed to see that in proportion as business men fail to take account of forces outside the business, in that proportion they are likely to miscalculate the results of business policies. Striking examples of such miscalculation are found in the experience of Mr. George M. Pullman back in the nineties, and of Mr. Patterson, of the National Cash Register Company, a decade later. Each of these men, with apparent good faith, undertook to surround his laborers with conditions of physical, mental, and moral uplift, and

each undertook to do it as an act of paternal bounty. Each of them, as far as we can judge, expected appreciation, gratitude, and increased efficiency. But they failed to take account of the group consciousness of their laborers; they did not know what the laborers were thinking; and because the laborers were thinking something different from what the employers thought, policies intended to arouse gratitude aroused instead resentment and a strike.

But there are many things besides too much paternalism that may result in a strike. Another concern of international dimensions and one whose officers, I can vouch, are men of high character and public spirit, also found itself con-

fronted with a strike in 1910. This was a highly organized business. For years its sales department had tried to seek out the highest grade of talent, and the result was a selling and distributing organization that was the model and the envy of competitors. But questions of employment seem to have gone by default, the general policy being confined to a sincere but vague good-will toward employees and acceptance of things as they were.

The issues of the strike were issues with which we are all familiar. On the workers' side, grievances and no workable machinery for redress; result: organization, concerted group action, force. On the other side, there was a personal readiness to hear grievances, coupled

with insistence on the ancient right of the employer to conduct his own business in his own way, without interference from employees or the public.

After weeks of deadlock the strain of a distressing situation, losses from the interruption of business, regard for public opinion and the opinion of friends, combined with their own desire to do the right thing, induced the employers, probably against their best judgment, to recede from their position. An agreement was made providing for increased wages, standardization of piece-work, a preferential shop, and appointment by the firm of a person to hear grievances and to coöperate with a representative of the union in securing redress.

The union in this case was fortunate in being represented by a high-minded man who was a real statesman. The firm selected a trained economist as labor expert, and he soon had an employment department in operation. Together these men and their colleagues have kept peace in the concern and have developed and expanded the machinery for settling disputes into a model of industrial-relations organization.

Some four years after the strike the business head of the firm testified in a public hearing that he should scarcely know how to conduct his business without the organization which now obtains for dealing collectively with labor. He also in the same hearing expressed the

view that a large employer is a trustee of the public, responsible for the measure of public welfare in which his business results; and this man, remember, is not a reformer or even a radical, but just a successful business man.

In this bit of labor history there were, no doubt, many fortunate but uncontrollable factors which, otherwise combined, would have brought a less happy result. But two things stand out: first, the laborers listened to wise counsel — they were well led; and second, the employers, when they consented to make an agreement, gave the plan adopted their genuine support. Combining good citizenship with business sense they were able to understand the new social influ-

ences that make the formulas of 1880 a poor gauge of efficiency factors in 1910. They are now enjoying the benefits of their willingness to learn.

The effect of social forces is seen under different circumstances and from an entirely different angle in the present halting policy of American railroads.[1] Here, in addition to other social elements in the question, is the fact of definite government control. This circumstance has accustomed railway managers to look at both the internal and the public factors in their success. A number of years ago, before Mr. Justice Brandeis became a member of the Su-

[1] Referring to the situation early in 1916 when this sentence was written.

preme Court, he pointed out, as many others have since done, that the railroads were looking too much to the government factor, and too little to the economy and effectiveness of their own internal administration. Even though we concede this point, it is still clear that the highest efficiency of our railroads must wait upon a clarification of policy with respect to the great social fact affecting railway operation — the fact of government control. We may not approve the precise manner in which the railroads respond to this fact, but obviously they cannot be efficient and ignore it.

Examples, ranging all the way from accepted and enforceable legal restric-

tions to the interplay of the most subtle group sentiments, could be multiplied at will to bring out the presence of the social factor in efficiency standards. Were it not that internal business policies, on the one hand, and public policy toward business, on the other, are so frequently vitiated by failure to reckon with the probable reactions which a particular measure will call forth, I should not retard the discussion to emphasize a point so obvious. But though the presence of social factors is obvious, how to measure them is not obvious. General principles that bear on a specific case are hard to locate and difficult to apply. Even the broad lines of social and business policy are not always clear,

and the probable trend of future policy is still less clear.

Just what are the principles that are being worked out in order to determine the forms and the limitations under which business energy shall be expended, and how do they differ from those followed a generation ago? Take the other side of the efficiency ratio: toward what results are we trying to have business energy directed? Again, what are the instruments with which society is enforcing its purpose? How effective are they, how effective are they likely to become? Finally, what bearing will this social effectiveness or lack of effectiveness have on standards of business efficiency for the generation about to begin its work?

Even though we cannot answer these questions to-day, we have, to-day, the task of educating the generation that must answer them. More than this, the education we provide for the generation about to begin its work will determine, in no small measure, the kind of answers the future will give. It is, therefore, of great importance that in our ideals and our policies for educating future business men we should try to anticipate the social environment in which these men will do their work.

We are in the habit of speaking of the present as a time of transition — the end of the old and the beginning of the new. In a very real sense every period is a period of transition. Society

is always in motion, but that motion at times is accelerated and at other times retarded. Clearly we are living now in a period of acceleration — a period which must be interpreted not so much in terms of where we are, as of whence we came and whither we are going. This means that we cannot hope to prepare an educational chart for the future without understanding the past.

In our study of business we are always emphasizing the "long-time point of view," and we fall back upon this convenient phrase to harmonize many discrepancies between our so-called scientific principles and present facts. On the whole, we are well justified in assuming these long-time harmonies, but

it will not do to overlook the fact that many important and legitimate enterprises have to justify themselves from a short-time viewpoint. Of more importance still is the fact that in this country enterprises of the latter sort have predominated in the past. This circumstance has a very marked bearing on the nature of our task, when we try to approach business from the standpoint of education.

There are strong historical and temperamental reasons why nineteenth-century Americans were inclined to take a short-time view of business situations. Our fathers were pioneers, and the pioneer has neither the time, the capital, the information, the social insight, nor

the need to build policies for a distant future. The pioneer must support himself from the land; he must get quick results, and he must get them with the material at hand.

Every one of our great industries — steel, oil, textiles, packing, milling, and the rest — has its early story colored with pioneer romance. The same romantic atmosphere gave a setting of lights and shadows to merchandising and finance and most of all to transportation. Whether we view these nineteenth-century activities from the standpoint of private business or of public policy, they bear the same testimony to the pioneer attitude of mind.

Considering our business life in its

national aspects, our two greatest enterprises in the nineteenth century were the settlement of the continent and the building-up of a national industry. In both these enterprises we gave the pioneer spirit wide range. With respect to the latter, industrial policy before 1900 was summed up in three items: protective tariff, free immigration, and essential immunity from legal restraints. This is not the place to justify or condemn a policy of *laissez-faire*, or to strike a balance of truth and error in the intricate arguments for protection and free trade; nor need we here trace the industrial or social results of immigration. We need only point out that the policy in general outline illustrates

the attitude of the pioneer. The thing desired was obvious; obvious instruments were at hand — immediate means used for immediate ends. From his viewpoint, the question of best means or of ultimate ends did not need to be considered.

In building our railways and settling our lands the pioneer spirit operated still more directly, and in this connection it has produced at the same time its best and its worst results. The problem of transportation and settlement was not hard to analyze; its solution seemed to present no occasion for difficult scientific study or for a long look into the future. The nation had lands, it wanted settlers, it wanted railroads. If

half the land in a given strip of territory were offered at a price which would attract settlers, the settlers would insure business for a railroad. The other half of the land, turned over to a railroad company, would give a basis for raising capital to build the line. With a railroad in operation, land would increase in value, the railroad could sell to settlers at an enhanced price and with one stroke recover the cost of building and add new settlers to furnish more business.

In its theory and its broad outline the land-grant policy is not hard to defend. The difficulties came with execution. We know that in actual operation the policy meant reckless speculation and dishonest finance. We know that no

distinction in favor of the public was made between ordinary farm lands, forest lands, mineral lands, and power sites. We know that the beneficiaries of land grants were permitted to exchange ordinary lands for lands of exceptional value without any adequate *quid pro quo;* and we know that there were no adequate safeguards against theft.

Wholesale alienation of public property was intended to secure railroads and settlers, but the government did not see to it that the result was actually achieved. Speculation impeded the railways in doing their part of the task, while individuals enriched themselves from the proceeds of grants or withheld the grants from settlement to become the basis of

future speculative enterprises. All this seems to show that in execution at least our policy from a national standpoint was short-sighted. Careful analysis and a more painstaking effort to look ahead might have brought more happy results.

And how about the railroads from the standpoint of private enterprise? A railway financier once described a western railway as "a right of way and a streak of rust." The phrase was applicable to many railways. Deterioration and lack of repairs were, of course, responsible for part of the condition it suggests, but much of the fault went back to original construction. It was the wonder and the reproach of European engineers that their so-called reputable American

colleagues would risk professional standing on such temporary and flimsy structures as the original American lines. Poor road bed; poor construction; temporary wooden trestles across dangerous spans — everything the opposite of what sound engineering science seemed to demand. Why did not the owners of the roads exercise business foresight to provide for reasonably solid construction?

What seems like an obvious and easy answer to all these questions is that both the Government and the road were controlled in many cases, as the people of California well know, by the same men, and these men were privately interested. As public servants or as officers of cor-

porations they were supposed to be promoting settlement and transportation; as individuals they were promoting their own fortunes. This result was secured by the appropriation of public lands and the conversion of investments which the public lands supported. That this sort of thing occurred on a large scale and that it involved the violation of both public and private trusts is fairly clear.

Public sentiment has judged and condemned the men who in their own interests thus perverted national policy; and we approve the verdict. But it is not so easy to condemn the policy itself or to indict the generation that adopted it. Looking at the matter from the standpoint of the nation, it was precisely

the inefficiency and the corruption in government which augmented the theoretical distrust of government and made it unthinkable to the people of the seventies, that the Government should build and operate railways directly. The land-grant policy entailed corruption and waste, of course; but what mattered a few million acres of land! No one had heard of a conservation problem at the close of the Civil War. Resources were limitless; without enterprise, without labor and capital, without transportation they had no value, they were free goods. The great public task of the nineteenth century was to settle the continent and make these resources available for mankind. This task it performed with nine-

teenth-century methods. From our standpoint they may have been wasteful methods, but they did get results. In its historical setting, the viewpoint from which the task of settlement was approached was not so far wrong.

When we examine the counts against the railroads as private enterprises, we find that the poor construction, which from our point of vantage looks like dangerous, wasteful, hand-to-mouth policy, is only in part explained by the fact of reckless and dishonest finance. I am advised by an eminent and discriminating observer that the distinguished Italian engineer to whom Argentina entrusted the building of its railroad to Patagonia, produced a structure which

in engineering excellence is the equal of any in the United States to-day. But the funds are exhausted and the Patagonia railroad is halted one hundred and fifty miles short of its goal; there are no earnings to maintain the investment.

The reaction of high interest rates on the practical sense of American capitalists and engineers has made operation at the earliest possible moment and with the smallest possible investment of capital the very essence of American railway building in new territory. Actual earnings are expected to furnish capital, or a basis for credit, with which to make good early engineering defects. All this, of course, is but another way of saying that the criterion of engineering effi-

ciency is not "perfection," but "good enough." This distinction has placed a large measure of genuine efficiency to the credit of American engineers, and it explains why Americans have done many things that others were unwilling to undertake. It is a great thing to build a fine railroad in Patagonia, but I am sure we all rejoice that the first Pacific railroad did not have its terminus in the Nevada sagebrush. The standard of technical perfection set by the Italian engineer did not fit the facts. It is not the failure to attain his standard but the failure to measure up to a well-considered standard of "good enough" that stands as an indictment against American railway enterprise.

Viewed in historical perspective the business environment of the pioneer appears to have been dominated by two outstanding facts: one, seemingly inexhaustible resources; the other, a set of political and economic doctrines which told him that these resources must be developed by individual initiative and not by the State. The faster the resources were developed the more rapidly the nation became economically independent and economically great, and since they could not be developed by the State it is not strange that private initiative was stimulated by offering men great and immediate rewards. These rewards have encouraged individuals and associations of individuals to

aspire to a quick achievement of great economic power, and their aspirations have been realized. Such achievements have been a dominating feature of our business life, and we have regarded them as an index of national greatness.

Abundance of resources, if it did not make this the best way, at least made it an obvious way, for the nineteenth century to solve its business problems. From our vantage point we can see that serious mistakes were made. When we set the foresight of our fathers against our own informed and chastened hindsight their methods appear clumsy and amateurish. But in the main they did solve their problems: they gave us a settled continent; they gave us transporta-

tion and diversified industry. We now have our garden and the tools with which to work it. If the pioneer allowed the children to pick flowers and in some cases to run away with the plants and the soil, he did not fail to develop the estate.

Our inheritance from the pioneer is not only material but psychological. The pioneer attitude of mind has made a real contribution to our business standards. The very magnitude of our enterprises, the fact that we have had to develop our methods as we went, our success in approaching problems that way, have given us a confidence in ourselves and a readiness to undertake big things without counting the cost. This readiness is a large, perhaps a dominant,

factor in our contribution to world progress. It is not an accident that the greatest problems of mountain railway building have been met and solved by American engineers, or that they have carried a great railroad under two rivers to the heart of our greatest city. These in a private way, and the Panama Canal in a public way, are typical of American engineering enterprise.

As with engineering, so with general business. Our pioneer managers did not lack imagination; they were not afraid to undertake; they were not constrained by worry lest they make mistakes. They made many mistakes. Some were corrected, others ignored, but many more were concealed by an abundant success.

The pioneer could afford to do the next thing and let the distant thing take care of itself, and in large measure he escaped the penalties which normally follow a failure to look ahead.

Substantial forces have tended to keep the pioneer spirit alive. If some resources have been depleted, other resources have been found to take their place. Scientific discovery, invention, and the development of technique have placed new forces at our command. Products have been multiplied, but the demand for products has multiplied faster. We have been able to continue offering men great and immediate rewards for the development of new enterprises. As labor was needed, our

neighbors have continued to supply it. The result is that our business has continued to go ahead without being too much concerned about the direction in which it was going.

Business has eagerly appropiated the results of science without itself becoming scientific. The difficult way of science makes slow progress against the dazzling rewards of unbridled daring. So many strong but untrained men have been enriched by seizing upon the immediate and obvious circumstance — there has been so little necessity for sparing materials or men and so little penalty for waste — that we have developed a national impatience with the slow and tedious process of finding out.

Along with our technical and business enterprise, with the courage and imagination of which we are justly proud, a too easy success has given us a tendency to drop into a comfortable and optimistic frame of mind. Imagination, intuition, power to picture the future interplay of forces, courage and capacity for quick action — all these qualities are as essential to-day as they ever were to business success. The pioneer environment reacting on our native temperament has given us these qualities in full measure, but it has also given us a habit of doing things in a hit-or-miss fashion. Our very imagination and courage applied to wrong circumstances and in perverted form have often borne the fruit of national defects.

There is a strong inclination to assume that the old approach to problems will bring the same results that it did in the past, and to forget that we are living in a new world. The problems confronting the pioneer were not the problems we face to-day. It requires great ability to draft a prospectus; in many of our greatest enterprises drafting the prospectus has been the crucial task. But a prospectus is not a going concern. There is a vast difference between promotion and administration. In the promotional stage of our business life we were solving problems made up of unknown quantities, problems for which the only angle of approach was found in the formula $x+y=z$. We still have and shall always

have problems of the $x+y=z$ type, but if we apply that formula to a problem in which $2+2=4$ we are not likely to get the best results.

Business may not yet be a science, but it is rapidly becoming scientific. Scientific inquiry is all the while carrying new factors from the category of the unknown to that of the known, and by so doing it is setting a new standard of business efficiency. The more brilliant qualities, like courage and imagination, must be coupled with capacity for investigation and analysis, with endless patience in seeking out the twos and the fours and eliminating them from the equation. When it is possible by scientific research to distinguish a right way and a wrong

way to do a task, it is not an evidence of courage or imagination but of folly to act on a faulty and imperfect reckoning with the facts.

The person who uses scientific method takes account of all his known forces; he prepares his materials, controls his processes and isolates his factors so as to reveal the bearing of every step in the process upon an ultimate and often a far distant result. In other words, he tries at every stage to build upon a sure foundation. His trained imagination and judgment working on known facts set the limit on what he may expect to find, and interpret what he does find, all along the way.

In so far as particular business en-

terprises have rested on engineering, chemistry, biology, and other sciences, a scientific method of approach has long had large use in business; but the scientist in business has usually been a salaried expert — a man apart from the management — and it has been his results, and not necessarily his methods, that have influenced business practice. We are now coming to understand that scientific method is the only sure approach to all problems; it is a thing of universal application, and far from being confined to the technical departments of business, where the technical scientists hold sway in their particular specialties, it may have its widest application in working out the problems of management.

The way in which a man trained in scientific method may determine business practice in a scientific manner finds illustration in a multitude of practical business problems, ranging all the way from the simplest office detail to the most far-reaching questions of policy. To cite an example, of the simpler sort: if an item in an order sheet is identical for eight out of ten orders is it better to have a clerk typewrite the eight repetitions along with the two deviations or to use a rubber stamp? Of course, there are not one or two, but many, items in an order sheet and the repetitions and deviations are not the same for all items. In practical application, the rubber-stamp method means a rack of rubber stamps

placed in the most advantageous position. It requires also a decision as to the precise percentage of repetitions which makes the stamp advantageous. Then arises the further question, why not have the most numerous repetitions numbered and keyed and thus avoid the necessity of transcribing them at all?

The rule-of-thumb approach to this kind of problem would proceed from speculations concerning the effect of interrupting the process to use the stamp, the result of such interruptions on the accuracy of work, difficulties in the way of necessary physical adjustments, and many other questions that would occur to the practical manager.

The scientific method of approach

would first inquire whether there are any principles derived from previous motion study or other investigations, that apply to the case in hand. In accord with such principles it would then proceed, as far as possible, to eliminate neutral or disturbing third factors and to arrange a test. The results of the test would lead, either to a continuance of the old practice, or to the establishment of a new practice for a certain period, after which, if serious difficulties were not revealed, the new practice would be definitely installed.

It should be emphasized at this point, that there is a fundamental difference between investigations or tests which contemplate an immediate modification of

practice and those investigations in which research — that is, the discovery of new truths — is the sole object. Tests which are carried on within the business must never lose sight of the fact that a business is a going concern and that it is impracticable and usually undesirable to transform a business into a research laboratory. Scientific methods in business should not be confused with the larger problem of scientific business research. This larger task, if undertaken by the individual business concern, is the work of a separate department. For business generally, it will have to be conducted either by the Government, or by business-research endowments. The point at which, in practical business, research should give

place to action is a question that wise counsel and the sound sense of the trained executive must determine.

An example of the contrast between a scientific and a rule-of-thumb approach, as applied to a question of major policy, is found in discussions of the relative advantages of a catalogue and mail-order policy over against a policy of distribution by traveling salesmen. A few years ago the head of one of the largest wholesale organizations in the United States, talking with an intimate friend, expressed fear that his house, which employed salesmen, might be at a dangerous disadvantage with its chief competitor, which did an exclusively mail-order business. The friend comforted him with the assurance

that there are many buyers who prefer to be visited by salesmen and to have goods displayed before them. This fact, he held, would always give an adequate basis for the prosperity of a house that employed the salesman method of distribution.

Neither the fear nor the assurance here expressed reveals a scientific attitude of mind. Careful analysis shows, on the one hand, that the mail-order policy is not the most effective means of cultivating intensively a well populated territory. On the other hand, it shows that the expense of sending salesmen to distant points in sparsely populated areas more than absorbs the profits from their sales. Individual concerns have arrived

at these conclusions by experiment and accurate cost-keeping and have succeeded in reaching a scientific decision as to which territories should be cultivated by salesmen and which ones should be covered exclusively through advertising and the distribution of catalogues and other literature.

The difficulty that business men find in applying scientific method consistently in the analysis of their problems is strikingly revealed in the labor policy of the great majority of industrial concerns. While many men of scientific training are dealing with problems of employment, probably no concern has undertaken to make a scientific analysis to determine what are the foundations

of permanent efficiency of the labor force which they employ. This is not surprising, when we remember how complicated is the problem and how short the time during which we have been emphasizing the human relations as distinguished from the material or mechanistic aspect of business organization.

To state even a simple problem of management, like the one concerning the order sheet, set forth above, is to reveal some of the difficulties of analysis which characterize all subject-matter having to do with human activity. This means that we should not expect results too quickly nor should we be disappointed if the first results of efforts at scientific analysis are not absolutely con-

clusive. As soon as we recognize that business is primarily a matter of human relations, that it has to do with groups and organizations of human beings, we see that scientific analysis of it cannot proceed in exactly the same way as with units of inanimate matter. The reaction of human relations to changed influences, frequently cannot be predicted until the changes occur. Business, in other words, is a social science and, like all social sciences, must deal primarily with contingent rather than exact data; likewise conclusions drawn from scientific analysis must in large measure be contingent rather than exact.

Although we cannot always isolate our factors, control our processes, and other-

wise apply scientific method, with results as conclusive as those obtained in laboratories of chemistry, physics, or biology, we need not therefore reject scientific method in favor of a rule-of-thumb. We should, however, be suspicious of too sweeping claims based on any but the most careful and painstaking analysis of facts by persons who are thoroughly trained in the kind of analysis they undertake.

While a scientific approach will help in solving many problems of business detail, the substitution of scientific method for a rule-of-thumb approach will realize its object most completely in the influences exerted upon fundamental long-time policy, influences which cannot bear

fruit in a day or a year. The circumstances of our history have retarded the acceptance of a long-time scientific viewpoint in business, but forces now at work are making powerfully for a scientific approach to business management. First among these is a realization that our resources are measured in finite terms. We have begun to take account of what we have, and we are able in a rough way to figure the loss from what we have squandered. The situation is not desperate, but we can see that it may become so. To insure against possible disaster in the future we need to exercise effective economy in turning resources into finished goods, and we need to eliminate waste in the distribution and the

consumption of these goods. In private business the need for such economy is reflected in rising prices for raw materials. In its public aspect we have labeled the problem, conservation.

A second force making for a scientific approach to business is found in the beginnings of a social policy to which I have referred. This policy is showing itself in limitations upon the way in which materials and men may be utilized and in a sharper definition of the business man's obligations to employees, to competitors and consumers. As long as resources are to be had for the asking, while cheap labor can be imported and utilized without restraint, and where no questions are asked in marketing the

product, there is not the right incentive to do things in a scientific way. As business becomes more and more the subject of legal definition, as the tendency grows of regarding it as a definite service, performed under definite limitations, and for definite social ends, margins will be narrowed and it will become increasingly necessary to do things in the right way.

The scientific approach to business has made great progress during the past decade. Out of the hostile criticism to which so-called big business has been subjected have come several government investigations and court records, in which policies of different concerns have been explained, criticized, and compared. Besides, business men themselves have

become less jealous of trade secrets and have shown an increasing inclination to compare results. A good illustration of this tendency is seen in the growth of "open price associations" and in the spirit in which credit men, sales managers' associations, and other business groups exchange information. In the same spirit, business and trade journals have given a large exposition of individual experience and increasing attention to questions of fundamental importance.

More significant still has been the scientific management propaganda. Mr. Brandeis's dramatic exposition of this movement in the railway rate cases in 1911 at once made it a matter of public interest. Later discussion may not have

extended acceptance of scientific management, but it has not caused interest in it to flag. The movement has become essentially a cult. Its prophet, the late Frederick Taylor, by ignoring trade-unionism and labor psychology in the exposition of his doctrines, at once drew down upon them the hostility of organized labor; the movement was branded as another speeding-up device. More serious than the antagonism has been the spirit in which some of the scientific management enthusiasts — not all — have met it. They seem to assume that their science is absolute and inexorable, that it eliminates disturbing factors and hence needs no adjustment to adapt it to the difficulties met in its

application. This air of omniscient dogmatism, together with the disasters of false prophets, has somewhat compromised the movement and has diminished its direct influence. However, business men have been stirred up. They have become accustomed to using the words "science" and "business" in the same sentence. They are in a receptive attitude for ideas. The indirect influence has been great.

A final, and probably in the long-run the most permanent, influence making for the extension of scientific method in business has been the new viewpoint from which universities have been approaching the task of educating men for business. Prior to 1900, university edu-

cation for business in the few universities that attempted anything of the sort was confined to such branches of applied economics as money and banking, transportation, corporation finance, commercial geography, with accounting and business law to give it a professional flavor. There were also general courses labeled commercial organization and industrial organization, but these were almost entirely descriptive of the general business fabric of the country, and had but the most remote bearing on the internal problems of organization and management which an individual business man has to face. The assumption was that a man who was looking forward to business would probably do well

to secure some information about business, but there was little attempt at definite professional training of the kind given to prospective lawyers, physicians, or engineers.

Within the past few years universities have begun to undertake seriously the development of professional training for business. The result has been that through organized research and through investigations by individual teachers and students, the universities are gathering up the threads of different tendencies toward scientific business and are themselves contributing important scientific results. Out of all this there is emerging a body of principles and of tested practice which constitutes an appropriate

subject-matter for a professional course of study, and points the way to still further research.

One of the earliest results of an approach to business in an attitude of scientific research, is the discovery that there are certain fundamental principles which are alike for all lines of business, however diverse the subject-matter to which analysis is applied. Substituting the principle of likeness for diversity as the starting-point of business analysis, has far-reaching consequences not only for education and research but for management as well. First among these consequences is the fact that search for elements of likeness leads at once to replacing the trade or industry with the

function as the significant unit both of research and organization.

If we start our study of business by separating manufacturing, railroading, merchandising, banking, and the rest, with a large number of more or less logical subdivisions in each field, and then try to work out a body of principles applicable to each subdivision, we soon run into endless combinations and lose all sense of unity in business as a whole. As soon, however, as we approach business from the standpoint of accounting, sales management, employment, executive control, and when we find that lessons in statistics, advertising, moving materials, or executive management, learned in connection with a factory, can be

carried over with but slight adaptation to the management of a store, we at once get a manageable body of material on which to work.

Recognition of the principle of likeness and of its corollary, analysis by function rather than by trade, marks perhaps the greatest single step yet taken in the development of scientific business. The principle, however, has its dangers. Analysis by function implies functional specialization in research and a similar tendency in business practice. Without specialization there can be no adequate analysis of any large and complex body of facts. With too intense specialization there is always danger that the assembling and digesting of facts, and

especially the conclusions drawn from them, will reflect some peculiar slant of an individual or of a particular specialty.

The accountant does not always go after the same facts as the sales manager, and even with the same facts the two are likely to draw quite different conclusions as to their bearing on a general policy. Specialization, too, may result in setting an intense analysis of one group of facts over against a very superficial view of other facts — or again, an intense analysis of the same facts from one viewpoint with failure to consider them from another, and perhaps equally important, viewpoint. Unless these weaknesses are corrected, the business will lack balance; the work of departments

will not harmonize; there will be no fundamental policy; goods sold on a quality basis will be manufactured on a price basis — all of which leads to disastrous results.

Scientific method is the first article in the creed by which business training must be guided. The growing necessity for critical and searching analysis of business problems, justifies all the effort we can put forth to develop plans for training into a structure of which scientific method shall be the corner-stone. But analysis is not all. Following analysis must come synthesis. Somewhere all the facts and conclusions must be assembled and gathered up into a working plan. It is this task of leveling up rough

places in the combined work of department specialists, that puts the training and insight of both the executive and the director of research to the most severe test. It is a mark of a well-trained executive that in performing his task he instinctively follows principles instead of trusting alone to momentary intuitions, however valuable and necessary these may be.

And here it is that the second article in the creed of business training appears. The executive's task is primarily to adjust human relations, and the nature of the principles by which these adjustments are made, determines the relations of a concern to its laborers, to competitors, to customers, and to the public. If

the executive comes to his task without a mind and spirit trained to an appreciation of human relations, he is not likely so to synthesize the work of his subordinates as to make for either maximum efficiency within the business or its maximum contribution to the life of the State.

The term "executive" in large and highly organized concerns is likely to mean the head of a department. A large proportion of the department heads now in business are men of purely empirical training. Their horizon is likely to be limited and to center too much in the departmental viewpoint. They may perhaps be able to see the whole business, but if they do, they will probably see

it exclusively from the inside. There is frequently nothing in their business experience that has made them think of the great forces at work in society at large. As the bulk of business has been organized in the past, there has been no department in which, automatically and in the regular course of business, a view looking outward is brought to bear. If it came at all, it was reflected back from the larger relations and the larger social contacts of the head of the business. Many general executives have been promoted from the position of head of department at a period in life when their habits of thought had become crystallized, and it was not natural that they should entirely change those

habits with the change in their responsibilities.

Besides, the economics of competition and a strong group sentiment among business men have tended to make them resist social influences which might react upon the policies of their own business. Superficial conclusions drawn from such experiments as those of Pullman and of Patterson, to which reference has been made, have seemed to justify such resistance and have fortified men in the belief that business and response to social influence should be kept separate in water-tight compartments.

More recently men have been coming to understand the fundamental defects in the Pullman and the original Cash

Register plans and have come to realize that even a separate welfare department may be successfully incorporated in a business, if only certain fundamental policies are followed in its management. Still more significant is the view looking-outward and the consequent harmonizing of social and business motives, which is coming in the ordinary development of business policies as a result of their more fundamental analysis.

Perhaps the greatest step toward a fuller consideration of facts on the outside is taken, when a business creates a separate department of employment. It is hard to see how the head of an employment department can have the largest measure of success if he sees only the

facts on the inside. A comprehensive application of scientific method to problems of employment leads a long way into analysis of the social facts affecting the people who are employed.

From different angles the same thing is true in other departments of business, notably so in the case of advertising and sales. One of the most obvious outside facts which affect sales, is the location and density of the population, and yet it is a fact which frequently is neglected. Another outside fact, which ultimately advertisers will have to consider, is the consuming power of population. They have been very keen to study our psychological reactions, and in doing this they have undertaken the entire charge

of the evolution of our wants. But they have not always gone at their work from the long-time point of view. Sometime they will have to take account of the fact that unwise consumption impairs efficiency and depletes the purchasing power from which advertisers must be paid.

The next step in the scientific analysis of business is to provide for more ample analysis of facts on the outside. Weakness at this point explains the defects in many plans for the welfare of employees, it explains the defects in scientific management, mentioned above, and it explains many other shortcomings in projects for increasing the effectiveness of business.

But men who approach business from the standpoint of university research are not free from the same danger. In their effort to orient themselves with the business facts, they get the business point of view and run the risk of centering attention too much on materials and material forces. Even psychological reactions of men and women may be analyzed from the standpoint of their mechanics, without ever going back to those impelling motives which have their roots in the human instincts and complex social reactions of which the men and women are a part.

Approached from the standpoint of scientific method, the field of conflict between different interests in business

and between so-called "good business" and "good ethics" becomes measurably narrowed. I do not mean to give science the sole credit for achievements along this line. More frequently advance in moral standards has been forced on unwilling victims through legislation, public opinion, or class struggle, and then men have discovered, as a happy surprise after the event, that "good ethics" was profitable. But science has done something, and might have done still more, if our efforts at scientific analysis had not been so often underweighted on the human side. These very discoveries of harmony between wholesome practice and good business constitute a part of the body of fact of which a truly

scientific method must take account. When a review of all the cases in which compulsion has changed existing methods shows an almost invariable adaptation and a tendency toward better results after the level of competition is raised, a man of scientific training immediately asks the question, whether a fundamental law is not at work.

A glance at social legislation during the last century reveals some interesting uniformities. Every step in the development of the English Factory Acts as they stood at the beginning of the present war, starting with the first Child Labor Bill in 1802 and ending with the Shop Regulation Act of 1912, had been taken against the protest of the most

vocal elements in the trades concerned. In nearly every case investigation will show, either that the requirements of the measure enacted fell considerably below the practice of the best concerns, or that the whole industry was in need of some outside impulse to start it in the way of more efficient organization. As long as it is permissible to employ five women and five children to tend five machines, there is not the right incentive to make adjustments by which all five of them can be tended by one man.

In this country in our forty-nine jurisdictions we have been going forty-nine times over the experience of England and other countries, in connection with each effort to force up the competitive

level. We have seemed to be quite unable to apply the most obvious lessons of experience either at home or abroad to new cases, and yet essentially the same uniformity of adaptation has occurred here as abroad. Like our employer, whom a strike impelled to adopt an advanced policy toward labor, we find after the event that we should not know how to do business under the standards in force before the law compelled a change.

Enforcement of the Sherman Anti-Trust Law has been frequently cited as an example of unwise government interference. With respect to many of the incidents of enforcements, criticism has been well founded. But the net result

of that enforcement has been a much sounder body of law on the important subject of fair and unfair competition. Besides, we now have in the Federal Trade Commission the beginnings of an administrative organization for dealing with the whole subject of monopoly and restraint of trade. And more than all this, we have a better prospect than ever before, of some sort of mutual respect between government and business, and of honest coöperation in working out their mutual problems. It is not likely that the Anti-Trust Law has prevented honest men from earning legitimate profits from legitimate business service to anything like the extent which would be indicated by the vigor with which it

has been opposed. But even if it has, we have received something for the price paid.

And so the list might be lengthened, pure food and drugs, meat inspection, public service regulation, industrial safety, and the rest, — in nearly every case, from a purely business point of view, opposition, in so far as it related to the main point of government policy, has been a mistake. Refusal of the business men affected to accept a policy of regulation has tended to shut them out of the councils in making adjustments of detail. This fact has hindered the government in performing a service which in most cases both the public and the business needed to have done.

Even when we admit, as obviously we must, the persistence of conflict between different interests with respect to a large mass of business detail, the fact of group influences and social control still remains an important consideration to which business analysis must give due weight. There has been a large mass of business in this country, in which the community has been unable to recognize any productive service; it has been regarded only as a means of acquisition for those who pursue it. Legislation, public opinion, and the evolution of enforceable standards within particular business groups are tending all the while to narrow the sphere of purely acquisitive business. With respect to that great

mass of business which has both an acquisitive and a productive side, these forces are gradually bringing us to an attitude of mind in which we regard gain as a by-product of service.

The public is also recognizing that the purpose of goods and services is to promote individual and community welfare, and as fast as public policy to that end can be worked out, it is carrying emphasis even beyond specific products and services to the social ends for which these products and services exist. In these ways society too is trying, clumsily perhaps, to take a long-time view of its business and to conserve the human values that make for progress.

Obviously it is but a partial and in-

complete analysis of a business situation that omits these human factors; a working policy that fails to anticipate their force and then to reduce the zone of conflict to its lowest limits is neglecting an important element in the definition of long-time efficiency. And business men are beginning to see this.

A few weeks ago the manager of a large department store in San Francisco was kind enough to show me his record of departmental profits for a number of months. The fluctuation in relative profits of different departments month by month was apparent, especially the fact that after a certain month several departments which had previously earned high profits became relatively much

less profitable. I asked the manager to explain, and he did in this way: At the time when the change occurred a new policy had been inaugurated by which employment of help had been centralized and standardized for the whole concern. As a result, when certain departments which had been decidedly sub-standard with respect to wages were brought up to standard, they were unable to earn anything like the profits which they had previously shown.

Without going into the question of the connection between high wages and profits, of which this incident in my opinion was an exception, it was clear to the manager as to me that the increase in wages in these particular de-

partments had been accompanied by an immediate loss in profits. Furthermore, the manager was unable to determine, from figures available before and after the change, that this loss had been directly compensated by gains in other departments. In order to get his viewpoint concerning the change at issue, I asked him two questions: (1) Why was he willing to make a change of such a fundamental character without being able to ascertain in advance whether or not it would be profitable? (2) In the absence of facts that could be incorporated in the accounts, was it his belief that the change would in time be profitable, and if so, how did he reach his conclusion?

His response to the first question revealed to me an intensely natural but nevertheless complex motive. He said, substantially, that he was confident that standardized employment was the only acceptable policy, from the standpoint of the general manager. Given the necessity of standardizing, it was necessary for the general reputation of the business to standardize upward rather than downward. He wanted his business to be regarded as one in which the best standards of employments obtained. Furthermore, he added, "California will soon have a minimum wage law, and I want this business to be well in advance of any wage standards which may be imposed by law."

Answering the second question more specifically, the manager recognized the advertising value of a reputation for having good conditions of employment. He had discovered no tendency for general profits to diminish or for the rate of increase to be retarded more than temporarily. In the absence of definite facts to the contrary he considered it safe to assume that as soon as the business should become adjusted to the new standards, standardization of wages upward would be profitable for the business as a whole. He wanted to make the change voluntarily and to commence operating successfully on the new basis in advance of competitors.

It is scarcely possible to discuss this

sort of business situation with a progressive manager, without feeling that he does not approach business exclusively from the standpoint of gain; in other words, to use the phrase of Adam Smith, he is not exclusively an "economic man." The manager of a modern business, on the contrary, is a man very much like the rest of us, and being such a man he is first of all desirous of conforming to whatever standards are in way of acceptance by that part of society in which he moves. Obviously, these standards are made up of both selfishness and altruism, with selfishness tending all the time to become more enlightened as society advances.

As we come to distinguish more

clearly between reward for service and mere one-sided gain, there occurs a parallel change in men's motives; they become more sensitive to social disfavor and to social esteem and less and less willing to devote their lives to activity by which no one but themselves is benefited. In this reaction of altruism with enlightened selfishness there emerges in men's minds a new concept of their own interest and a better understanding of the kind of business policy that in the long-run brings them the greatest reward. Of course, this does not mean that enlightened selfish interest has ceased, or that it will ever cease, to be a motive force in business. But there is a vast difference between selfishness

untempered with other motives and selfishness eager for the esteem of one's fellows.

Clearly it is a task of higher education to help promote response to the more enlightened motives. The difficulty which even men of advanced university training have in taking full account of human factors indicates something of the nature and importance of the task. The so-called "scientifically trained" manager tends to undervalue the human factor of his equation. His analysis is likely to be overweighted on the material side. When the university starts — as it is starting and should start — to train future executives, it needs to analyze its own problem, and take full

account of the dangers against which it has to guard. Otherwise the training itself will be overweighted on the material side and will perpetuate the weakness that it ought to correct.

The greatest danger in this connection, as I see it, arises out of the distinction between the so-called "cultural" and the "vocational" point of view. This distinction comes to us with a large mass of traditional authority, and we have classified subjects and erected barriers on the assumption that the distinction is real. As far as the training of business executives is concerned, I am confident that the distinction is one which ought never to be made. It is a great misfortune, when young men and

women who are preparing for a serious career are permitted to think of culture as a non-functioning ornament; equally unfortunate is it for them to think of their prospective vocations as activities devoid of cultural association.

A few days ago a student who had already selected his profession and was anxious to be about it confided to me, as many others have done, how distasteful he was finding the task of "working off his culture." Does any one really suppose that the sophomore who is "working off his culture" under faculty compulsion, in order to get his college degree, is really absorbing from his study anything which, as the faculty assumes, makes him a better man and yet, as he

himself believes, contributes nothing to effectiveness in his profession? Or take the case of the man who devotes himself with professional earnestness to his two, three, or four years of college work —will he find that he has invested his time and his money on a purely ornamental luxury that has no relation to his later work?

The first great element of training which the university can give to future business men is a mastery of scientific method as a means of analyzing problems and synthesizing results. Quite as fundamental as this is the development of an intelligent and sympathetic approach to questions of human relationship. Only the beginning steps in the

direction of business efficiency can be taken while attention is confined to the material and mechanistic side of business organization. No secure basis for permanent efficiency can be established until we are prepared to go deeply into the question of human motives and to understand something of the complex reactions that come from individual and group associations. Without such a basis we cannot hope for a nationally effective business organization.

Business is a form of coöperation through which men exercise control over natural forces and thereby produce things with which to satisfy human wants. Any subject well taught, which gives an insight into human relations or into nature

and man's control over it, will help prepare a person to deal with the intricate problem of human relations in business — that is, if the student has studied the subject in an attitude of mind to see its bearing on what he is preparing to do.

The question is not so much one of too few or too many so-called culture subjects, but rather of the attitude of mind in which all subjects are undertaken. It is a question of getting such a survey of the great facts of human experience and of so pointing their significance as to enable men to approach a problem of human relationship with sympathy and something of a long-time dynamic viewpoint. When this is accompanied by a mastery of scientific method, the foun-

dations are reasonably secure. Without such foundations, secured either in college or out, analysis of problems in a specialized business field is almost sure to be one-sided and incomplete.

The kind of professional training that I would suggest for the future business executive would be laid on the foundation of a college course of two, three, or four years in which the viewpoint and the varied methods of study in several diverse branches of knowledge had been thoroughly instilled. When the student passed to the professional study of business he would be expected to master the fundamentals of business organization and management, including the basic elements of subjects like ac-

counting, finance, and other divisions of organization common to all lines of business. All of these studies would be pursued with constant reference to the fact that business is carried on in a community in which certain public policies are enforced and in recognition of the fact that business should conform to these policies and help to make them effective in contributing to public welfare.

As the student advances, the course would proceed toward greater and greater specialization, and would finally culminate in an intensive study of some fairly narrow business problem, pursued until the student has mastered it in principle and in detail. The result of his study

would be set forth in dignified readable English which an intelligent layman could comprehend and which would make the article acceptable for publication in a journal of standing.

Professional study of business, then, should give students a comprehensive many-sided survey of business and a thorough grasp of scientific method as used in analyzing business facts. It should prepare the student to think complicated business problems through to the end and to put the results of his thinking together into an effective working plan. Finally, it should maintain an atmosphere in which business problems are regarded in a large and public-spirited way.

We are well under way with professional training for business; but if students fail to get the general educational foundation for it, it will not accomplish the best results. If the two, three, or four years of college study is regarded as something purely ornamental and irrelevant, while they are getting it, if it fails to arouse an appreciation both of scientific method and of human values, or if these values are thought of as something to forget when the student comes to the analysis of practical problems, the university will not have done what it might do for the promotion of high standards of efficiency in business.

In all of the discussions I have tried to point out how emphasis in business

is gradually shifting from acquisition, to production and service; how there are gradually evolving in business, professional standards of fitness, of conduct, and of motive; and how more and more these standards enter into the measuring of business success. Our educational assumptions still rest too largely on the old dollar standard of success with its well-known inferences about the blood-and-iron equipment with which that success can be attained.

Psychologists tell us that we tend to get what we expect. If we fail to create enthusiasm for the opportunity for service in business; if we assume that young persons who enter business are going to measure their returns in dollars alone;

or if we continue to feature, as we have done, the break between the so-called "cultural" and the professional parts of the university course, there will be danger that we shall continue to get the thing for which we plan.

There can be no doubt that many of our old assumptions about the relative dignity and social distinction attaching to different kinds of study, as well as the assumption of a purely mercenary motive in business, have impeded a wholesome reaction between higher education and business standards. These assumptions have created an atmosphere — an objective and subjective attitude of mind, a set of motives and desires, of appreciations and valuations, all of which stand

in the way of the most far-reaching educational results.

So far as these assumptions can be rationally explained, they rest on ideas that are in part mistaken, in part exaggerated, and in part obsolete. The application of scientific method to business has created an entirely new relationship between business and education. Scientific analysis and social policy are establishing a new connection between the material and the human facts of business. In the new atmosphere the business executive requires those fine qualities of mind and spirit, and the ability to command these qualities for a given task, which peculiarly it is the work of the university to cultivate.

In proportion as universities have vigorously undertaken this work, and have applied scientific method to their own problem of articulating it with higher education in general, the line of approach to professional business training has become increasingly clear. Among the notable developments of the past decade has been a shifting of emphasis from the training of specialists to the training of business executives. As preparation for executive work comes to be generally recognized as an appropriate field for systematic professional study, the standards that scientific method has already achieved will become fixed and better standards of business efficiency and service will emerge.

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